

of Grand Canary, where I obtained several specimens by brushing the grass at the edges of the small marsh immediately behind the sea-coast.

II.—*Remarks on the Pollinosity of the Genera Lixus and Larinus.*

By HENRI JEKEL, Member of the Entomological Society of France, &c. &c.

THE following paper, the manuscript of which was delivered to Mr. White, of the British Museum, in January 1859, together with certain remarks on two species of *Larinus*, for Mr. Daniel Hanbury, to accompany his note on the products of these two species*, has not (from a misunderstanding on my part?) been added to that note, but was returned to me a few weeks ago by Mr. White. I had understood Mr. Hanbury desired me, besides determining the two species, to give a general account of the authors who had treated on the habits of that genus; hence the few remarks which I now beg for acceptance in this Journal, hoping they will not be devoid of interest.

With respect to the tomentosity and pollinose transudation of *Lixus* and *Larinus*, I think it will not be out of place to mention here a fact until now overlooked, so far as I know. It appears to me, from long observation of the covering adorning many Curculionideous Beetles, that Nature acts, in clothing them, by *layers* or coatings. There is, immediately above the derm of the elytra and thorax, a thin tomentose squamosity, either more or less piliform and opaque, or very fine, silky, and bright. This ground-layer, common to many other tomentose Coleoptera, is comparatively persistent, though far more easily rubbed off than setiform or hairy pilosity, and is analogous to the squamosity of species having *one layer* only. This tomentosity is not produced by exudation, but grows according to the general law, is susceptible of partial or total baldness, as in merely squamose insects, and if rubbed off, when the insect is alive, would be restored in course of time only. Then comes the *second layer*, much less persistent (even in non-pollinose species†), which in the above two genera, as in many others, is a real pollinose transudation, susceptible of a relatively immediate renewal when rubbed off the living insect. Of this upper *layer* I need not remark, after the conscientious observations of M. Godart, the highly interesting contro-

* "Note on two Insect-products from Persia," in Journ. Proceed. Linn. Soc. iii. p. 178 (1859).

† See my analogous observations in 'Fabricia Entomologica,' i. 154.

versies of MM. Coquerel and Laboulbène, and the experience of M. Rojas*, all recorded in the 'Annales de la Société Entomologique de France,' 1851-1857.

Hence the results in pollinose species are these: specimens may have their pollinosity more or less rubbed off, and show underneath part of the ground squamose tomentosity; others may be completely deprived of that pollinose efflorescence, and show the ground tomentosity only; finally, others, still more rubbed, show only a portion of the latter, &c. Any entomologist, therefore, in describing either squamose, tomentose, or pollinose species, should not content himself with the description of so variable a substance only, but note also if there is another layer beneath it, and, in fine, should lay bare the derm in order to display its characters.

Exclusive of hair or pile, to which (like naked Coleoptera) squamose, tomentose, or pollinose species are liable, one might divide them, according to the composition of their clothing, as follows:—

1. *Col. Monolepida*: having a single layer of squamosity or tomentosity, with or without denser markings.

* One of M. Rojas's observations bears on a species of *Lixus*, inhabiting Venezuela, that I called *L. vittatus in litt.*, intending to describe it in its proper place in 'Insecta Saundersiana.' I think it now preferable to profit by this opportunity to give a complete diagnosis of the species, and change its name, 1st, in honour of that zealous entomologist; 2ndly, because, as that gentleman observes, very fresh specimens are so densely covered with sulphureo-ochraceous pollinose dust, and others, entirely rubbed off, are so completely destitute of it, that the *vitta* are hardly discernible.

Lixus Rojasi, Jekel (*L. vittatus*, Jekel. litt.: Rojas, Ann. Soc. Entom. France, 1857, p. 330, without description).

Elongatus, postice latior, niger, subnitidus, polline sulphureo-ochraceo in maculis lateralibus inferis vittisque elytrorum densius tectus; rostro terete, arcuato, leviter punctulato et canaliculato; capite profundius punctulato; thorace elongato, angusto, dorso densissime levissimeque punctulato, cum punctis majoribus remotis, medio linea tenuissima basi ante scutellum profunde impressa, lateribus levioribus, politis; scutello haud conspicuo; elytris pone medium ampliatis, lateribus paulo compressis, apice conjunctim obtuse acutis, ad suturam tantum paulo divergentibus, dorso bifariam punctatis, sutura, margine, interstitiis duobus illa connexis alternisque dorsalibus elevatis, subpolitis, alternis angustioribus, impressis, præsertim antice et postice, fundo polline plus minusve repletis.

Longit. (rostr. 4-5½ mill. excl.) 16-22. Latit. bas. thor. et elytr. 4½-5½—pone med. elytr. 6-7 mill.

♂ minor, angustior, rostro thorace brevior, minus arcuato; thorace subcylindrico, h. e. ante medium haud angustiore quam basi; elytris modice convexis, ante medium haud fornicatis.

♀ rostro longitudine thoracis; thorace lateribus versus apicem conico-angustatis; elytris ante medium subfornicato-convexis.

2. *Col. Dilepida*: having two layers of squamosity or tomentosity, one inferior, with or without denser markings, generally of a pale unicolor hue (grey, ashy, or whitish); the other superior, less persistent, easier rubbed off, increasing or modifying the coloration of the markings, when they exist, and filling more or less the areas between the markings.
3. *Col. Paipalepida*: *ground-layer* tomentose, following the same laws as in class 2; but *superior layer* being a pollinose transudation, more or less deeply colouring the ground, as well as the ground-markings, when they exist.

To complete the various modes in which the derm of Coleoptera presents itself to the eye of the entomologist, the *naked species* (always exclusive of hair or pile) should form the fourth class (or rather the first of all), viz.,—

4. *Col. Alepida*.

As a supplement to the above observations, it will not be superfluous, I hope, to give a summary list of the principal species of *Larinus*, whose habitat, food, even larva state and metamorphoses, have been recorded by various authors; a stimulus, I think, to further researches on the part of such entomologists as may be in the condition of making so desirable investigations.

Lar. cynaræ, Fabr.—*Cynara cardunculus*: Jacq. Duval, *Genera Coleopt. Eur.*, Curcul. p. 40; South of France.—Thistles: Lucas, *Explor. Scient. Algér.*, Art. iii. 442; Algeria, May and June.—*Cynara scolymus*: Johannes Gistel, *Die Mysterien der Insektenwelt*, 1856, p. 82; Germany; &c. &c.

Lar. cardui, Rossi.—*Carduus nutans* and *Cynara scolymus*: Gistel, loc. cit. pp. 68 & 82; South Germany; &c. &c.

Lar. buccinator, Oliv.—Thistles: Lucas, loc. cit. p. 443; Algeria, May, June; &c.

Lar. onopordinis, Fabr.—*Onopordon acanthium*: Gistel, loc. cit. p. 444; Algeria.—*Echinops spinosus*: Lucas, loc. cit. p. 443; May, June, Algeria; &c.

Lar. maculosus, Besser.—Larva in capitula of *Echinops ritro*, vicinity of Montpellier, June, August, and September; Jacq. Duv. *Ann. Soc. Ent. Fr.* 1852, p. 731; with an account of the variability of coloration of that species, owing to the state of the plant (conf. the opinion of Germar in *Ins. Spec. Nov.* p. 381).—Letzner, *Catal. of Coleopt. Larvæ*, in *Zeitschrift für Entomologie*, Breslau, 1855, p. 43.—Laboulbène, *Ann. Soc. Ent. France*, 1858, p. 284; &c. &c.

Lar. scolymi, Oliv.—*Echinops spinosus*: May–July, Lucas, loc. cit. p. 443; Gistel, loc. cit. p. 82; &c. &c.

Lar. flavescens, Germ.—*Echinops spinosus*: May–July, Lucas, loc. cit. p. 443.—*Centrophyllum lanatum*: June and July, Montpellier, Jacq. Duval, Ann. Soc. Ent. Fr. 1852, p. 732, &c.

Lar. virescens, Sch.—Thistles: Küster, Käfer Europa's, xi. 87.

Lar. sturnus, Schall.—Thistles, May, Algeria: Lucas, loc. cit. p. 443.—*Cirsium lanceolatum*; Montpellier, August: Jacq. Duv. Ann. &c. 1852, p. 733; &c.

Lar. pollinis, Germ.—*Berberis communis*, Jacq. Duv. Genera, loc. cit. p. 40; August, Montpellier.—*Cirsium palustre*, Gistel, loc. cit. p. 75; &c.

Lar. maurus, Oliv.—Thistles, May: Lucas, loc. cit. p. 444.—Id. Jacq. Duv. Ann. 1852, p. 733, with an account of the larva, its parasite (a species of *Ichneumon*), and causes of variations in the coloration of the perfect insect.—Chapuis et Candèze, Catal. Larv. Coleopt. in Mém. Soc. Liège, p. 552 (extract, 212), tab. 7. f. 7; with a description of the larva; &c.

Lar. jaceæ, Fabr.—*Carduus nutans* and *crispus*, in society with *Lixus filiformis* and *Rhinoceyllus latirostris*: L. A. Dieckhoff, Stettin, Ent. Zeit. 1844, p. 384.—*Centaurea jaceæ*: Jacq. Duv. Genera, &c., p. 40.—Id. Gistel, loc. cit. p. 71.—Julius Roger in Zeitschrift für Entom., Breslau, 1856, p. 100: large Thistles; &c.

Lar. turbinatus, Sch.—*Carduus crispus*, in society with *Lar. carlinæ* and *Rhinoceyllus latirostris*, Jul. Roger, loc. cit. p. 101.

Lar. canescens, Sturm.—All species of *Carduaceæ*, especially *Carduus macrocephalus*, Desf., May and June, in Algeria; Lucas, loc. cit. p. 444; &c.

Lar. planus, Fab.—Thistles: Küster, loc. cit. xi. 91; &c.

Lar. lynæ, Küster, loc. cit. xi. 92, on Thistles.

Lar. bombycinus, Lucas.—*Carduus macrocephalus*, Desf.; May and June, Lucas, loc. cit. p. 444; Algeria.

Lar. obtusus, Sturm, Sch.—On flowers of Thistles: Küster, xi. 95; &c.

Lar. ferrugatus, Sch.—*Carduaceæ*, spec. *Card. macrocephalus*, Desf.; Algeria, May, June: Lucas, loc. cit. p. 444.—Flowers of *Centaurea aspera*, July, vicinity of Montpellier: Jacq. Duval, Ann. &c. 1852, p. 733, et Genera, p. 40; &c.

Lar. carlinæ, Oliv.—*Carlina acaulis*: Gistel, loc. cit. pp. 69 & 310.—*Carduus crispus* and other species, J. Roger, loc. cit. p. 101.—*Serratula arvensis*, Laboulbène, Annal. Soc. Entom. France, 1858, p. 279–285, pl. 7. no. 2. fig. 1–9; with complete and most accurate history and description of the metamorphosis, &c. &c.

Lar. ursus, Fabr.—*Carlina corymbosa*, June and July, Montpellier; Jacq. Duval, Annal. &c. 1852, p. 233.—Genera, &c. p. 40; &c.

Lar. Genei, Sch.—On dead and desiccated Thistles, Sardinia : Küster, loc. cit. xi. p. 94.

Lar. rugicollis, Sch.—Carduaceæ, May, June, July : Lucas, loc. cit. p. 445, Algeria.

Lar. albicans, Lucas, loc. cit. p. 445.—In capitula of Carduaceæ, February, Algeria.

Lar. Chevrolatii, Sch.—Along the stems of Thistles, Algeria : Lucas, loc. cit. p. 446.

Lar. cardopatii, Lucas, loc. cit. p. 446.—Vicinity of Cherchel, Algeria ; with an account (after *Dr. Mialhes*) of the habits of the larva, feeding on *Cardopatum amethystinum*, Sp., where it undergoes all its transformations.

Lar. nanus, Lucas, loc. cit. p. 447.—Under stones, Boudjarea mountains, near Algiers, January.

Lar. lineola, Dufour, Excursion Entomologique dans les montagnes de la vallée d'Ossau, in Bulletin Soc. Scienc. Lettr. et Arts de Pau, 1843 ; on flowers of Compositæ.

III.—Characters of undescribed Species of the Genus *Leucospis*.

By F. WALKER, F.L.S.

THE *Leucospideæ* are very distinct from the other families of Chalcidites, and appear to be nearly as much allied to the Cynipites, and to connect the two tribes.

In New Caledonia they are represented by *L. antiqua* ; in the Aru Islands by *L. Aruera* and *Aruina* ; in China by *L. Sinensis* ; in Hindostan by *L. atra*, *petiolata*, and *Guzeratensis* ; in South Africa by *L. ornata* and *incarnata* ; in West Africa by *Marres dicomas* ; in North Africa by *L. brevicauda*, *Fabricii*, and *Algirica* ; in Egypt by *L. miniata*, *frenata*, *scutellata*, *obsoleta*, and *intermedia* ; in Arabia by *L. elegans* ; in Tauria by *L. aculeata* and *gibba* ; in South Europe by *L. grandis*, *gigas*, *nigricornis*, *intermedia*, *Spinolæ*, *varia*, *Biguetina*, *dorsigera*, *rufonotata*, *clavata*, *Grohmanni*, *assimilis*, and *Sicelis* ; in Canada by *L. Canadensis* ; in the United States by *L. Shuckardi*, *subnotata*, and *basalis* ; in Mexico by *L. Klugii* and *Mexicana* ; in the West Indies by *E. Cayennensis* ; in South America by *L. Hopei*, *Cayennensis*, *leucotelus*, *Santarema*, *Egaia*, *Tapayosa*, and *speifera*, and by *Polistomorpha Surinamensis* and *sphegoides*.

It thus appears that the Mediterranean region is their chief habitation, and there they have their most characteristic form, which is more or less modified in several other districts.

In North America and in China there is no alteration of the